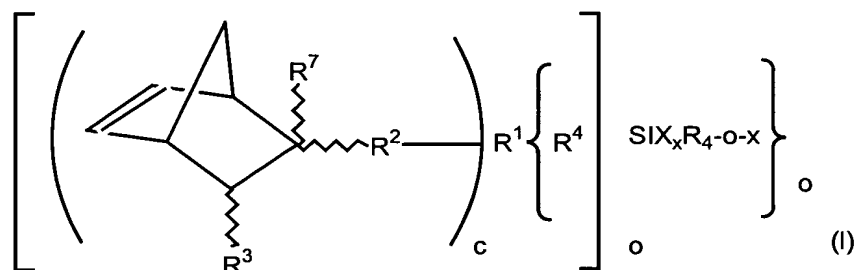


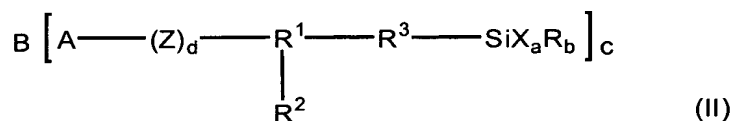
(i) a compound of formula I



wherein

- R = alkyl, alkenyl, aryl, alkylaryl or arylalkyl comprising between 1 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,
- R¹ = alkylene, arylene, arylenealkylene or alkylenearylene comprising between 0 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,
- R² = alkylene, arylene, arylenealkylene or alkylenearylene comprising between 0 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,
- R³ = hydrogen, R²-R¹-R⁴-SiX_xR_{3-x}, carboxyl, alkyl, alkenyl, aryl, alkylaryl or arylalkyl comprising between 1 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,
- R⁴ = (CHR⁶-CHR⁶)_n-, where n = 0 or 1, -CHR⁶-CHR⁶-S-R⁵-, -CO-S-R⁵-, CHR⁵-CHR⁶-NR⁶-R⁵-, -Y-CS-NH-R⁵-, -S-R⁵-, -Y-CO-NH-R⁵-, -CO-O-R⁵-, -Y-CO-C₂H₃(COOH)-R⁵-, -Y-CO-C₂H₃(OH)-R⁵- or -CO-NR⁶-R⁵-,

- R^5 = alkylene, arylene, arylenealkylene or alkylenearylene comprising between 1 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,
- R^6 = hydrogen, alkyl or aryl having 1 to 10 carbon atoms,
- R^7 = hydrogen, alkyl, alkenyl, aryl, alkylaryl or arylalkyl comprising between 1 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,
- X = hydrogen, halogen, hydroxyl, alkoxy, acyloxy, alkylcarbonyl, alkoxy carbonyl or NR''_2 , where R'' = hydrogen, alkyl or aryl,
- Y = -O-, -S- or $-NR^6$ -,
- Z = -O- or $-(CHR^6)_m$ -, where m = 1 or 2,
- a = 1, 2 or 3, where b = 1 if a = 2 or 3,
- b = 1, 2 or 3, where a = 1 if b = 2 or 3
- c = 1 to 6,
- x = 1, 2 or 3, where $a + x$ = 2, 3 or 4;
- (ii) a compound of formula II



wherein

- B = a straight-chain or branched organic radical having at least one C = C double bond and 4 to 50 carbon atoms,

R = alkyl, alkenyl, aryl, alkylaryl or arylalkyl comprising between 1 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,

R³ = alkylene, arylene, arylenealkylene or alkylenearylene comprising between 0 to 10 carbon atoms, wherein any of these radicals optionally is interrupted by an atom or group selected from the group consisting of oxygen atom, sulfur atom, and amino group,

X = hydrogen, halogen, hydroxyl, alkoxy, acyloxy, alkylcarbonyl, alkoxycarbonyl or NR''₂, where R'' = hydrogen, alkyl, aryl or alkylaryl,

A = O, S or NH if d = 1 and Z = CO and

R¹ = alkylene, arylene or alkylenearylene comprising between 1 to 10 carbon atoms, wherein any of these radicals optionally is interrupted by an atom or group selected from the group consisting of oxygen atom, sulfur atom, and amino group, and

R² = COOH or H,

or

A = O, S, NH or COO if d = 1 and Z = CHR', where

R' = H, alkyl, aryl or alkylaryl, and

R¹ = alkylene, arylene or alkylenearylene comprising between 1 to 10 carbon atoms, wherein any of these radicals optionally is interrupted by an atom or group selected from the group consisting of oxygen atom, sulfur atom, and amino group, and

R² = OH

or

A = O, S, NH or COO if d = 0 and

R^1 = alkylene, arylene or alkylenearylene comprising between 1 to 10 carbon atoms, wherein any of these radicals optionally is interrupted by an atom or group selected from the group consisting of oxygen atom, sulfur atom, and amino group, and

R^2 = OH,

or

A = S if $d = 1$ and $Z = CO$ and

R^1 = N and

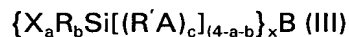
R^2 = H,

a = 1, 2 or 3,

b = 0, 1 or 2, where $a + b = 3$,

c = 1, 2, 3 or 4;

(iii) a compound of formula III



wherein

A = O, S, PR'' , POR'' , $NHC(O)O$ or $NHC(O)NR''$,

B = a straight-chain or branched organic radical derived from a compound B' having at least one (if $c = 1$ and $A = NHC(O)O$ or $NHC(O)NR^{11}$) or at least two C = C double bond(s) and 5 to 30 carbon atoms,

R = alkyl, alkenyl, aryl, alkylaryl or arylalkyl comprising between 1 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,

R' = alkylene, arylene or alkylenearylene,

- R'' = hydrogen, alkyl, aryl or alkylaryl,
- X = hydrogen, halogen, hydroxyl, alkoxy, acyloxy, alkylcarbonyl, alkoxy carbonyl or NR''_2 ,
- a = 1, 2 or 3,
- b = 0, 1 or 2,
- c = 0 or 1,
- x = an integer whose maximum value corresponds to the number of double bonds in the compound B' minus 1, or is equal to the number of double bonds in the compound B' if $c = 1$ and A is $NHC(O)O$ or $NHC(O)NR''$,

wherein said alkyl and alkenyl radicals optionally are substituted straight-chain, branched or cyclic and comprise 1 to 20 carbon atoms, the aryl optionally is a substituted phenyl, naphthyl or biphenyl, the alkoxy, acyloxy, alkylcarbonyl, alkoxy carbonyl, alkylaryl, arylalkyl, arylene, alkylene and alkylenearyl radical is a derivative of said alkyl or aryl radical;

(iv) a compound of formula IV



wherein

- R = alkyl, alkenyl, aryl, alkylaryl or arylalkyl comprising between 1 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,
- X = hydrogen, halogen, hydroxyl, alkoxy, acyloxy, alkylcarbonyl, alkoxy carbonyl or NR''_2 , where R'' = hydrogen, alkyl, aryl or alkylaryl,
- Y = an organic radical having 1 to 30 carbon atoms and 1 to 5 mercapto groups,

a = 1, 2 or 3,

x = 1, 2 or 3, where $a + x = 2, 3$ or 4;

and

(v) a precondensate derived from a compound represented by any of formulae I to IV

and wherein said hydrolytic polycondensation material further optionally comprises at least one compound selected from the group consisting of:

(1) a compound of formula V



wherein

R = alkyl, alkenyl, aryl, alkylaryl or arylalkyl comprising between 1 to 15 carbon atoms, further optionally comprising an atom or group selected from the group consisting of oxygen atom, sulfur atom, ester, carbonyl, carboxyl, amido, and amino,

X = hydrogen, halogen, hydroxyl, alkoxy, acyloxy, alkylcarbonyl, alkoxycarbonyl or NR''_2 , where R'' = hydrogen, alkyl, aryl or alkylaryl,

a = 1, 2 or 3; and

(2) a precondensate derived from a compound of formula V;

wherein said hydrolytic polycondensation is conducted by adding a substance selected from the group consisting of water, a solvent, and a condensation catalyst, and wherein said molar ratio of the sum of the compound(s) of formulae I, II, III and IV to the sum of compound(s) of formula V is between 1:0 and 1:20,

(b) forming a membrane from the said low-viscosity to resinous liquid, and

- (c) curing the membrane by forming an organic network using a process selected from the group consisting of thermal curing, radiation-induced curing and chemically induced curing, optionally or if necessary, in the presence of additives which are addition-copolymerizable and/or can be subjected to an addition and/or polyaddition reaction.

17. (Amended) A process for separating mixtures of substances selected from the group consisting of gas separation, reverse osmosis, electrodialysis, dialysis, pervaporation, microfiltration, ultrafiltration and hyperfiltration, wherein said process comprises separating said substances using the semipermeable membrane as claimed in claim 16.

Please add the following claim:

27. (New) The process according to claim 1, wherein said process further comprises drying the membrane after curing the membrane from the low-viscosity to resinous liquid.